

What is claimed is:

1. A method of producing an insulated container stock, comprising the steps of:

providing a layer of polymeric foam having a first surface and second surface;

providing a paper stock layer suitable for food or beverage stock;

extruding a molten polyolefin forming a molten sheet of film directed between the paper stock layer and a first surface of the foam layer to form an at least three layer laminate of foam, polyolefin film, and paper;

directing the at least three layer laminate into a nip having a preset gap; and,

pressing the layers of the at least three-layer laminate entering the nip into adherent contact as the molten film solidifies to form a laminate of substantially uniform and retained caliper exiting the nip.
2. A method of producing an insulated container stock according to claim 1 comprising the additional step of:

forming the at least three layer laminate into a container wall for surrounding an interior space.

3. A method of producing an insulated container stock according to claim 1, comprising the additional steps of:

forming the at least three layer laminate into a container wall for surrounding an interior space, and adding a bottom portion to form a cup.

4. A method of producing an insulated container stock according to claim 1, comprising the additional steps of:

extruding a molten polymer as a fourth layer forming a molten sheet of film directed onto a second surface of the foam of the three layer laminate to form a four layer laminate of film, foam, polyolefin film and paper;

directing the four layer laminate into an additional nip having a preset gap;

pressing the layers of the four layer laminate entering the nip into adherent contact as the molten film solidifies.

5. The method according to claim 4 wherein an additional layer of a polyethylene polymer is applied to the paper of the four layer laminate to form a five layer laminate.

6. A method of producing an insulated container stock according to claim 1, comprising the additional steps of:

extruding a heat shrinkable polymer as a fourth layer forming a molten sheet of film directed onto a second surface of the foam of the three layer laminate to form a four layer laminate of shrinkable film, foam, polyolefin film and paper;

directing the four layer laminate into an additional nip having a preset gap;

pressing the layers of the four layer laminate entering the nip into adherent contact as the shrinkable film solidifies.

7. A method of producing an insulated container stock according to claim 1, wherein the nip into which the three layer laminate is directed is comprised of two rolls.

8. A method of producing an insulated container stock according to claim 4, comprising the additional steps of:

forming the four layer laminate into a container wall for surrounding an interior space, and adding a bottom portion to form a cup.

9. A method of producing an insulated container stock according to claim 6, comprising the additional steps of:

forming the four layer laminate into a container wall for surrounding an interior space, and adding a bottom portion to form a cup.

10. A method of producing an insulated container stock according to claim 9, comprising the additional steps of:

heat treating the cup to shrink the fourth layer of shrinkable film of the four layer laminate formed into a container wall for surrounding an interior space.

11. A method of producing an insulated container stock according to claim 4, comprising the additional steps of:

chilling the nip into which the four layer laminate is directed.

12. A method of producing an insulated container stock according to claim 6, wherein the shrinkable polymer of the fourth layer is a polyethylene polymer or copolymer.

13. A method of producing an insulated container stock, comprising the steps of:

providing a layer of polymeric foam having a first surface and second surface

providing a paper stock layer suitable for cup stock

extruding a molten low density polyethylene polymer or copolymer forming a molten sheet of film directed between the paper sheet and a first surface of the foam layer to form a three layer laminate of foam, polyethylene film, and paper;

directing the three layer laminate into a nip having a preset gap;

pressing the layers of the three layer laminate entering the nip into adherent contact as the molten polyethylene film solidifies to form a laminate of substantially uniform and retained caliper exiting the nip;

extruding a shrinkable polymer as a fourth layer to form a molten layer of shrinkable film directed onto a second surface of the foam of the three layer laminate to form a four layer laminate of polyethylene film, foam, shrinkable film and paper;

directing the four layer laminate into an additional nip having a preset gap;

pressing the layers of the four layer laminate entering the nip into adherent contact as the shrinkable film solidifies; and,

forming the four layer laminate into a container wall for surrounding an interior space, and adding a bottom portion to form a cup.

14. A method of producing an insulated container stock, comprising the steps of:

providing a layer of polymeric foam having a first surface and second surface;

providing a paper stock layer suitable for cup stock;

extruding a molten low density polyethylene polymer or copolymer into a molten sheet of film directed between the paper stock layer and a first surface of the foam layer to form a three layer laminate of foam, polyethylene film, and paper;

directing the three layer laminate into a nip having a preset gap;

pressing the layers of the three layer laminate entering the nip into adherent contact as the molten polyethylene film solidifies to form a laminate of substantially uniform and retained caliper exiting the nip;

extruding a molten heat shrinkable polymer as a fourth layer forming a molten sheet of shrinkable film directed onto a second surface of the foam of the three layer laminate to form a four layer laminate of shrinkable film, foam, polyethylene film and paper;

directing the four layer laminate into an additional nip having a preset gap;

pressing the layers of the four layer laminate entering the nip into adherent contact as the shrinkable film solidifies;

forming the four layer laminate into a container wall for surrounding an interior space;

adding a bottom portion engaging the container wall along a lower side portion thereof to form a cup; and,

heat treating the formed cup to shrink the fourth layer of the four layer laminate.

15. An insulated container produced by:

providing a layer of polymeric foam having a first surface and second surface;

providing a paper stock layer suitable for food or beverage stock;

extruding a molten polyolefin forming a molten sheet of film directed between the paper stock layer and a first surface of the foam layer to form an at least three layer laminate of foam, polyolefin film, and paper;

directing the at least three layer laminate into a nip having a preset gap; and,

pressing the layers of the at least three-layer laminate entering the nip into adherent contact as the molten film solidifies to form a laminate of substantially uniform and retained caliper exiting the nip;

forming the at least three layer laminate into a container wall for surrounding an interior space, adding a bottom portion engaging a lower portion of the container wall to form a container.

16. An insulated container stock material comprising:

a paper stock layer;

a foam layer disposed along an interior surface of the paper stock layer;

a first polymer film layer disposed between the paper stock layer and foam layer,

wherein the polymer film layer is extruded as a molten film directed between the paper stock layer and the foam layer to form a three layer laminate of foam, polyethylene film and paper as the film solidifies;

a second polymer film layer extruded as a molten film directed onto the foam layer to form a four layer laminate as the polymer.

17. The insulated container according to claim 16, wherein the first and second polymer films are each independently selected from high density polyethylene, low density polyethylene, polyethylene copolymer, linear low density polyethylene, polypropylene, polypropylene copolymer, polybutylene and polybutylene copolymer.

18. An insulated container comprising:

a paper stock layer;

a foam layer disposed along an interior surface of the paper stock layer;

a first polymer film layer disposed between the paper stock layer and foam layer,

wherein the polymer film layer is extruded as a molten film directed between the paper stock layer and the foam layer to form a three layer laminate of foam, polymer film and paper as the film solidifies;

a polymer shrink film layer having a percent shrink of 30% or less extruded as a molten film directed onto the foam layer to form a four layer laminate as the polymer shrink film solidifies, and the four layer laminate formed into a container wall for surrounding an interior space,

a bottom portion engaging the container wall along a lower side portion thereof to form a container, and the formed container being heat treated to shrink the fourth layer of the four layer laminate.